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VOLUME XXVI

NUMBER 1

THE AGRICULTURAL STUDENT

OHIO STATE UNIVERSITY, COLUMBUS, OHIO



OCTOBER, 1919

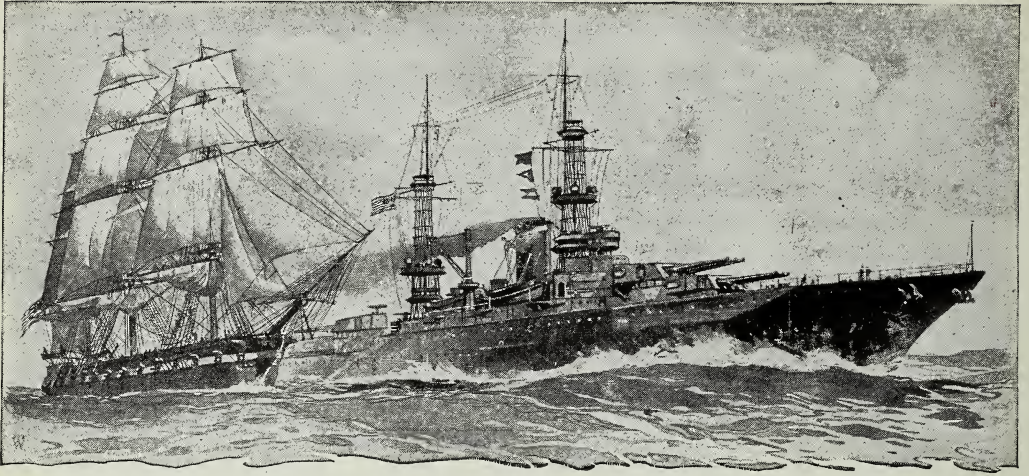
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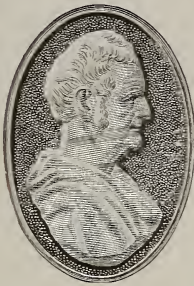
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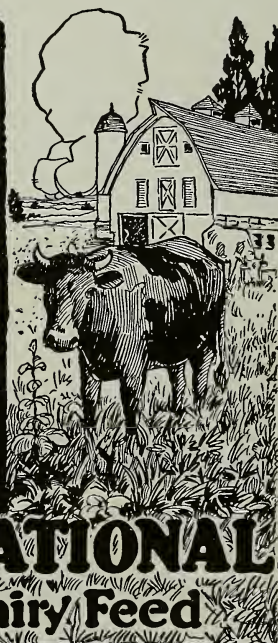
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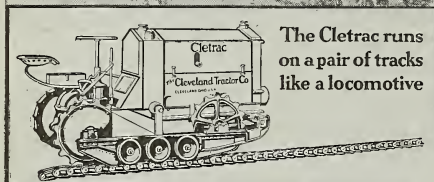
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D E D I C A T I O N

To the Alumni of the College of Agriculture of the Ohio State University who have gone forth into the field of Agriculture, and are contributing to the betterment, prosperity and reputation of Ohio State College of Agriculture as well as the nation itself; who are uplifting farming conditions and are bringing the social plane of farmers to a higher level, is this volume of The Agricultural Student respectfully dedicated : : : ; ; : ; : :

The Agricultural Student

VOL. XXVI

OHIO STATE UNIVERSITY, COLUMBUS, OHIO, OCTOBER, 1919

No. 1

CLASSIFICATION

By L. J. TABER, Master Ohio State Grange.

NO class of our citizens is more interested in the proper development of the State than the farmer. To him good roads, good schools and public improvements, in harmony with the progress of the age, are necessities for which he is willing to pay his full share. Every thoughtful farmer realizes full well that the cost of keeping abreast the public needs must constantly increase. He has no desire to place the burdens on others. He is perfectly willing to pay his proportionate share of the expenses of government.

At times the farmer has been considered stingy in matters of public improvements. This charge is not well founded. While the farmer desires that he shall receive one hundred cents of service out of every tax dollar, he is not in the way of progress, and is entirely willing to go hand in hand with those in other walks of life in making any governmental investments that will be for the greatest good.

The farmer has found it necessary many times to kick on matters of taxation. The reasons for this are obvious. Since the beginning of organized society the burdens of government have rested heavily on the tiller of the soil. Collection was easy and escape practically impossible. As society has progressed and taxation increased, a constantly increasing burden has rested upon real estate.

A half century ago most of the wealth in the State and Nation was tangible in its nature. Today more

than fifty percent of Ohio's wealth is intangible. The proportion will increase as wealth increases.

Civilized society has not yet devised any taxation scheme that is perfect and bears with equal fairness on all who enjoy the protection and blessings of government. It must be admitted, however, that no class of property should escape taxation. The burdens of government should not rest more heavily on one class than another.

While we admit that certain forms of property have greater earning power than others, we also recognize that it would be manifestly impossible to base the classification of property in accordance with its earning power; as the constant change of earning power would make permanent classification impossible and multiply the opportunities for dishonesty and evasion.

The uniform rule in taxation, under which our State has operated for more than half a century, has its admitted defects, like any human scheme. It does not prevent some injustice, some dishonesty, and has not prevented the tax dodger from escaping his obligation to society. While our present system is not perfect, before deciding to make a change, let us consider carefully what is proposed.

The owners of intangible wealth for generations have been seeking some method whereby they could legally pay a lower tax rate than the owners of real estate and other forms of tangible property. During the past few years

they have repeatedly sought to have the constitution of Ohio amended to permit the Legislature to classify property for purposes of taxation. From the beginning of this discussion the farmers of the State have looked with suspicion upon this move for many reasons and not without justification.

In the first place the owners of intangible wealth have been evading taxation for generations, and have been very active in preventing the passage

of farmers was further aroused when they tried to pass the classification amendment last fall, when the public mind was occupied with the wet and dry fight and war conditions, making an effective campaign impossible. Then, again, they sought to have the amendment presented at a special election on the 28th of May, at a time when the farmer was extremely busy; thus allowing a period so short that an effective campaign could not be waged. This



THE FARMER AND HIS HOME WILL BE TAXED UNJUSTLY UNDER CLASSIFICATION.

of legislation that would compel the listing and collecting of the taxes they owe the State. Not content with evading taxes, they have sought to legalize this evasion by clamoring for an amendment to the constitution and a lower tax rate for their particular class of property.

We see owners of this class of property enjoying the blessings of society and the advantages of Ohio's progress who are not only unwilling to help support the government, but at the same time are willing to help finance expensive campaigns to secure the adoption of an amendment that would legalize their past conduct. The suspicion

last was defeated by organized agriculture.

We shall not discuss the theory of classification, but shall try to point out some of the reasons why the Grange in particular, and farm and home-owners in general, have opposed in the past and will continue to oppose this proposition. Our opposition is not founded on either theory or suspicion, but upon the many grave dangers which lurk in the proposed change.

Twenty years ago a master of the Ohio State Grange challenged those favoring classification to state exactly what rate they proposed on farms and homes, and what rate they proposed on

money and intangible wealth. That challenge has been reiterated by State Grange masters in almost every fight since then. It has never been answered by the leaders of classification.

I am challenging them again to publicly state their scheme of classification and the rates proposed on the different classes.

Is it the Kentucky scheme, with its one-tenth of one percent on money and many forms of tax exemption?

Is it the Pennsylvania scheme where money pays four-tenths of one percent and real estate in some places pays as high as fifty-tenths?

Shall intangible property pay in Ohio a less rate in sum total than real estate pays to the State, and leave visible property with the total local tax to bear?

Who will pay the enormous debt of Ohio taxing districts if we have a low, fixed, flat rate on intangible property, a rate which may never change, a rate which the local taxing authorities cannot increase to meet increasing expenditures?

We know that Ohio needs more revenue. Today her schools are suffering seriously because of insufficient funds. The crime against the coming generation is almost past forgiveness. If intangibles had been returned for taxation in the past and if the owners of this property had borne their share of the governmental expense, as they should have done as a patriotic duty, today's condition would not exist.

Shall we forgive and forget and at the same time make this same intangible property the favored class in taxation? Does it deserve this at the hands of the voters of Ohio?

If we have classification in Ohio will

present conditions be improved and will we have more revenue?

I say emphatically, we will have less than at present. Ohio now obtains a greater percent of tax from intangible property than any State which has classification in force.

The honest classificationists are beginning to admit this fact. Senator Parrett, chairman of the joint tax commission of the Ohio Legislature, in a speech at Wilmington admitted that he doubted that classification would produce more revenue than we have at present. The Cleveland Clearing House, in a letter assessing the banks of Cleveland \$80,000.00 to help pass the classification amendment, says: "Classified property taxes may or may not alone produce adequate revenue. No one can speak with certainty about that." This letter was confidential to the bankers and was not meant for public perusal and is the honest opinion of the classificationists. Yet these same classificationists say to the general public: "Classification will reduce the taxes of every man who is now paying his just share of taxes, because classification will bring out for taxation millions of dollars worth of property on which not a single cent of tax is now paid."

How can you reconcile these two statements? We know classification will produce less revenue. The classificationists admit it among themselves. Yet they hold up the idea of more revenue to the general public as a bait to secure votes.

Their real campaign is to escape taxation. The New York Tax Commission brands classification with its low, flat rates as "a bribe to evade taxation."

CLASSIFICATION FAVORED

BY MARY LEE

(Mrs. Lee, who is a resident of Westerville and is a graduate of Ohio University, has been actively connected with Grange and educational legislation for twenty years and is one of the organizers of the National Tax Association.)

IT is a pleasure to discuss the proposed amendment for classification of property for purposes of taxation with a body of students. They are free from bias and are not easily swayed by the prevalent appeals to prejudice, self interest and avarice. The entire problem of the duty, responsibility and power of government is involved in the issue.

The proposed amendment to the constitution reads:

"Section 2. All property shall be taxed by such rules and methods and in such classes as may be provided by law. The rules and methods shall be uniform within the classes so established."

Briefly, the amendment provides that:

All property shall be taxed at once; it shall be divided into classes according to its character and taxed according to its productivity; rules and methods of taxation shall be uniform on property in the same class.

The existing constitution says that all property shall be taxed at a uniform rate. Its ability to pay is not considered. The proposed amendment considers the productivity of a class of property and bases the rate on the ability to pay.

The proposed amendment is in keeping with ethical and economic thought that it shall pay the most which is the best able. It conforms to the established custom of civilization to classify all subjects in any business, profession or vocation.

It conforms to the practice of the federal government. Classification was

provided by Hamilton in his construction of a stable and equitable system of raising revenues. It was supported by Washington, Jefferson, Madison, Monroe, John Jay, Albert Gallatin, and other financiers and statesmen who had to do with the establishment of a national fiscal system. The federal government has never even considered abandoning classification of property.

The general property tax or uniform rule has been tried by many states and abandoned by most of them. Its operation was notorious for the scandal it evoked. Inquisitorial laws have been enacted only to be cast aside by an outraged people. Inquisitorial laws can again be enacted. The stamp tax can be renewed, the assessors stamp can be required to make property collectible in our state, but they would prove so destructive that a clamor would rise for the repeal of measures that drove capital from these states to those having classification based on ability to pay. Money is fluid. It is also timed. It will go to the government at four and a half per cent rather than to business and agriculture at six per cent. The former is safe; there is no tax; there is no danger about collecting; it is not idle a minute. Safety, stability and freedom from tax are worth more to it than the extra one and one-half per cent. It classifies itself. The greater the anxiety, burden and tax, the harder it is to get money.

Only ten states retain the uniform rule: Utah, Nevada, Washington, Florida, Texas, Mississippi, Nebraska, South Carolina, Ohio and Illinois. The last two are the only populous and in-

dustrial states. Illinois voted favorable last year but the constitution provides that a measure must receive a majority of all votes cast, hence the amendment, while receiving a majority of votes, was lost because it did not get a majority of all votes cast at the election. Ohio has voted on the amendment several times, each time the number in its favor growing.

Opponents of classification point to Kentucky and refer to the special taxes used there. These are occupational and privilege taxes and as likely to be used with the uniform rule as with classification. They are not an argument either way.

Opponents say that farm lands have doubled and trebled in valuation. The same thing happened in Ohio when the Smith limit law was enacted.

Opponents claim that farmers have suffered from the tax in Kentucky. The State Tax Commission, which ought to have means of securing accurate information, says that the total increase of tax on lands in two years was but \$498,431.30, while the increase on intangibles has been \$1,074,534.48 in the same length of time. The percentage of the burden of taxation decreased on lands from 42.462 per cent in 1917 to 37.198 per cent in 1919. The decrease for town lots was from 34.922 in 1917 to 20.363 in 1919. The decrease of the burden borne by livestock was from 7.029 in 1917 to 1.047 in 1919.

The percentage borne by intangible property increased from 13.951 in 1917 to 17.818 in 1919. Bank deposits paid 1.211 per cent of the burden in 1917 and 2.921 in 1919.

In 1917 live stock paid a tax of 55 cents and in 1919 a tax of 10 cents.

In every state where the general property tax has been tried it has debauched public conscience. In every

state where it has been abandoned and the ability of property to pay a tax considered, intangible property has increased on the duplicate while intangible has been relieved of some of the burden. Tangible property and intangible which was on the duplicate welcomed the sharing of the burdens. Public sentiment does not object to drastic laws to get property on the duplicate if the rate is just but it will resist unjust rates. Public conscience and public security are very closely related.

Opponents say that a man who would lie for a dollar would lie for a cent. It is strange how the human mind can reason abstractly on mathematics, philosophy and logic yet when it enters the domain of practical living or ethical foundations, it begins to raise impossible barriers and create standards out of proportion to honest thought. It delights to dwell upon the foibles of human nature rather than its strength and excellencies. Suspicion, unbridled imagination, exaggerated misrepresentations, then take the place of reason and experience. The two most common traits of humanity are common sense and common honesty, despite cavilings to the contrary.

Why set up supposition against fact and suspicion against reality? Why hold on to a worn out system that was put in the constitution as an experiment by a former generation and refuse to listen to the voice of experience and reason? Men say the "principle of classification is right" and then set up bogies of what will happen if property is given a chance to be reasonably honest. If "the principle is fundamentally right," will not the same spirit that has statred it, voted for it in ever increasing numbers, be with us to aid in

WHY A COLLEGE EDUCATION?

By ALFRED VIVIAN, Dean College of Agriculture, O. S. U.

Is an ornament? That is the question. Is a college degree an asset or merely which is puzzling the mind of many a young man and young woman today. In these strenuous times, when everyone who wants to work can find employment at an unprecedented wage, a young man is inclined to pause before deciding to spend four years of his life in the college class room and labora-

still greater worth. This is particularly true of a college course in agriculture. One of our sister universities a few years ago made a survey of a large number of farmers in the state in which the university is located. It was found that those farmers with a high school education had a yearly income which was much larger than that of those whose education had not extended be-



TOWNSHEND HALL, OHIO STATE UNIVERSITY

tory. This is a practical age, which demands that every effort whether mental or physical shall yield adequate returns, and even education—the one thing which heretofore has been held sacred and unquestionable—is now asked to justify itself. Hence the question at the beginning of this paragraph.

Whether or not the degree is an ornament, the education for which that degree stands has a value which can be measured in material returns as well as in mental satisfactions which are of

yond the elementary schools. It was also made evident that those who had had a college course in agriculture were rewarded with annual incomes much in excess of that earned by the farmers with only the high school preparation for life.

If that was true yesterday, it will be increasingly true tomorrow. Under primeval conditions, with a virgin soil but recently wrested from prairie, swamp or forest; with a simple civilization; with little economic competition; when as yet there were no harmful in-

sects and plant diseases; when one had only to sow and to hoe and to reap—then, even the indifferent farmer could achieve a measure of success. But that time is no more. The day of the dullard is done.

Farm life has increased in complexity by leaps and bounds during the last two decades. The rapid development of our large industrial centers, and the changes in economic conditions accompanying the transition from a strictly agricultural country to a great industrial nation, have seriously affected the business of farming, and have made the labor problem, which in our grandfather's day was easily solved, a thing of menace and a "weariness to the flesh." An unintelligent agriculture has depleted the soil of its native fertility, injurious insects and plant diseases have been imported from far and near, pathological conditions have developed in the soil, our animals have acquired diseases that were unknown to our grandfathers.

Land values have increased to such an extent that the necessary capitalization of a farm project today is such as would have made those same grandfathers gasp in astonishment. But, in spite of all this, farming never before offered to the trained man such financial opportunities as it now lays before him. You will recall the joke about the farmer who when asked why the prices of his crops had increased so much, replied: "In these days when a farmer must know the botanical name of his crop, and the chemical name of the fertilizer he uses, the entomological name of the insects which attack his crops, and the phytopathological name of the diseases which destroy them, he must charge a higher price for his produce." When, in addition to having

that information, he must know how to combat the ever increasing hoard of insects and diseases that infect the crops, how to meet the exigencies of an increasingly complex market situation, and above all must know how to make one man do what three have done before, it is evident that the farmer of the future must not only be well paid but he must be a man of broad education and highly developed intelligence. Such men the college course in agriculture aims to prepare, and with that preparation they may look forward to a proper financial reward. Yesterday was the day of the untrained farmer—tomorrow ushers in the era when the farmer will recognize the fact that the best of all farm implements is a well-trained brain.

While it is true that farming offers good returns to the college trained man, it is equally true that there is an ever increasing demand for the man with a college training in agriculture for positions other than in actual farming. There has always been a considerable call for agricultural college graduates to serve as college teachers and as investigators in the experiment stations or in the United States Department of Agriculture. The extension services of our agricultural colleges are constantly looking for well trained men of high caliber, and the introduction of vocational agricultural education into the high school is creating a demand for graduates of our agricultural colleges which, up to date, it has been impossible fully to meet.

And now commerce and the industries have discovered that these colleges are turning out men who have a training which especially fits them for certain positions in the commercial and industrial world. This demand for agri-

culturally trained men is certain to increase. For the sake of the country it is to be hoped that the demand can be met without too seriously drawing upon the ranks of those who should remain in positions more intimately connected with practical agriculture.

So much for the financial side of the question. More important than that, however, are the opportunities for service which a college training in agriculture opens to the earnest young man. The transition from the inefficient farming of yesterday to the scientific and effective farming of tomorrow calls for outstanding leadership — for leaders who can blaze the way to the new agriculture. There are no precedents to follow. The agriculture of no other country can be transplanted to America. We shall work out an agriculture,

which, for one thing, will be based on an increased yield produced with a decrease in man power. A mode of farming which will call for a limited number of highly intelligent farmers. There will be great need for leaders to prepare the people for that day. Country life must be reorganized, the lure of the city must be offset by the call of the country, and the city people themselves must be educated to an understanding of the fact that their very existence demands that the farms of the nation shall remain in the hands of an intelligent farming population. The challenge to service goes out to every intelligent, wide-awake, country-minded young man. The college offers the training ground for this service. What do you intend to do about it?

OHIO TRACTOR DEMONSTRATIONS

By EDW. A. SILVER, '20.

ONE does not require a long memory to realize how the days where farm implements are concerned have changed. Time has marched with giant strides in this arena. If through the exigencies of war it had been in these later years in the nature of a forced march, it has only resulted in the farmer's surrender to the mechanical idea being the more rapid.

The Ohio Tractor Demonstrations which were eagerly looked forward to by the different farming communities of Ohio opened at Columbus, July 28, 1919, and ended at Akron, August 13, 1919, betokened the result of a most successful exhibition.

Under the supervision of Prof. Ramsower of the Department of Agricultural Engineering of Ohio State University, the department succeeded in bringing together a wealth of exhibits

unrivalled for variety and quality, and from the visitors' standpoint the demonstration proved far more attractive than any tractor demonstration heretofore attempted — not only have old features been improved but new features have been introduced.

Before the war the motor tractor was held doubtful as to its ultimate achievements. Today it is a practical business proposition proved by the appearance of twenty-eight models representing twenty-four of the noted tractor firms in the country.

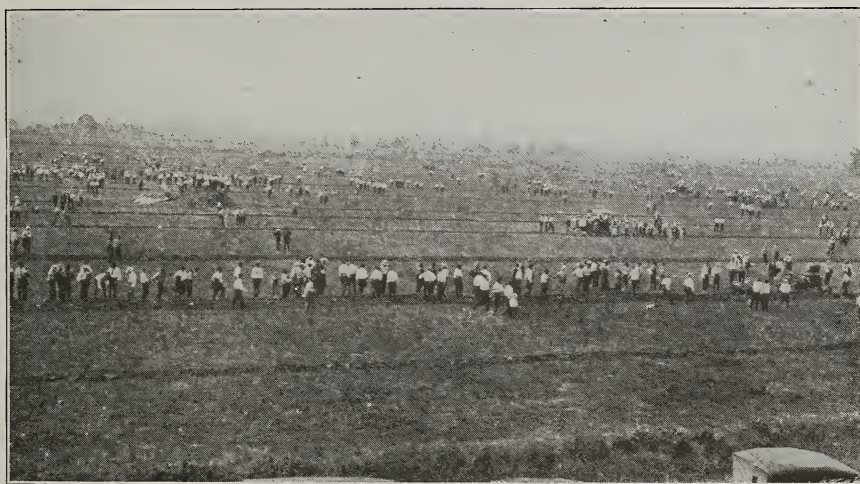
Farm conditions were sought as nearly as possible, varying somewhat at each of the four demonstrations, displaying to the farmer that the tractor is an able, efficient, and necessary part of his farm equipment. Only one tractor of each size or model was allowed to enter, and each exhibitor was compelled

to use the same tractor at each demonstration, the same to be transported from place to place by special train. No substitution of tractors could be made. If a breakdown occurred, the tractor had to be repaired in the field and later removed by its own power. It was necessary that all tractors be in their starting position with proper implements attached exactly at 9:30 a. m. and 1:30 p. m.; that all plows be adjusted previously to each demonstra-

withdraw from that day's demonstration. However, the rules of the demonstration were strictly complied with by all operators.

PLOWING CONDITIONS

The topography of the land and soil conditions varied widely at each of the four locations. The Columbus demonstration held at the farm of T. A. Johnson in a field of 160 acres of wheat stubble gave ample accommodations for a two days' demonstration. The field



THE FIRST FURROW AT FOSTORIA

tion; and that all plow experts were permitted to make final adjustments on plows during the first two rounds, thereafter only the operator accompanying the rig.

The depth of plowing was announced for each field at each demonstration. An observer was assigned to each tractor for the purpose of checking the quality of the work done, and time-keepers assigned to their respective operators in order to check the speed of each tractor. No "speeding" or shallow plowing was permissible, and any tractor doing work which was unsatisfactory was under obligation to

was burned over previous to threshing; a spark from a passenger train ignited the stubble, enveloping the whole field in a few minutes. The soil was rather hard and dry; the topography relatively level, and the soil type a clay loam with a heavy clay sub-soil. The quality of the work done was entirely satisfactory and was highly commended upon by Mr. Johnson, the owner of the farm.

Quite a different set of conditions occurred at Middletown. Here a more or less sandy soil was encountered, thereby furnishing poor traction for the machines. The fields were somewhat scat-

tered, including a few eight to ten percent grades and consisted mostly of wheat stubble. On the second day of the Middletown demonstration a field of weeds, varying in height from four to six feet was plowed under, leaving not a weed uncovered before the eyes of the "audacious" farmers who ventured forth in the "wilds" to watch the performance of the tractors and plows. Many farmers remarked that if they

specified as $8\frac{1}{2}$ to 9 inches. This was about one inch deeper than the ground had ever been plowed before. Some plowed consistently 9 inches, but the average was around $8\frac{1}{2}$ inches. The second day's plowing was considered the best that has ever been done in the State.

At Akron, conditions differed from any of the three former demonstrations. Here hill climbing was the test, grades being experienced as high as 20 percent.



PLOWING UNDER THE WEEDS AT MIDDLETOWN

"pulled through" in that field, they could "pull through" any place.

Still different conditions met the mechanical appliances at Fostoria. The soil was of a heavy black clay loam type, approaching a jack-wax in many places. Some exceedingly large rocks were encountered and considerable damage done to both the tractors and plows. In one instance a drawbar was pulled apart, while at another time this same tractor sheered itself of all lugs. These conditions are more severe on tractors and plows than would be the case if the machines were in the hands of the farmers. The plowing depth was

The fields were also somewhat scattered and were mostly in oat strubble; the soil was very sandy in nature, thereby furnishing very poor traction for the machines.

The amount of land plowed at each demonstration varied from 125 to 175 acres, each machine being allotted a plot of about one-half to one acre per plow bottom. A forty foot strip was left around the outside of the entire fields which was finished by the tractors after they had plowed their own lands.

SEED-BED PREPARATIONS

Great interest was shown by the farmers in the preparation of the

seed bed, the effectiveness of the tillage tools standing out in prominence before them. Practically each machine pulled a double disk with a cultipacker behind, some even pulling a disk grain drill, thereby executing the process of seeding in one operation. Several favorable comments were heard upon the adaptability of the cultipacker in seed-bed preparation. This machine proved its merits at each demonstration, and it seems that in a few years will entirely replace the old drum roller. The companies exhibiting tillage tools were as follows: Oliver, Roderick Lean and International disks. Oliver and Dunham cultipackers were very much in evidence, while the John Deere and Moline companies pulled their own line of equipment.

DRAW-BAR TESTS

One of the most interested features was the draw-bar tests, much interest being shown both by the farmer and manufacturer. The farmer followed the test very carefully and was especially anxious to know just what each tractor was capable of doing and seemed rather disappointed when told that the horsepower developed would not be made known until the finish of the series of demonstrations. A Gulley Dynamometer was used, being the second of its kind now in use. This machine consists of two units—the measuring unit proper, or piston which is connected between the tractor and plow and the recording unit which is set on wheels to be run alongside of plow. The piston is filled with ordinary lubricating oil, and as the tractor exerts a pull on the plow, the oil is compressed in the piston and by means of an ordinary steam gauge spring in the recording device a short arm with a pencil attached indicates the pounds pulled on a permanent

paper record. The distance traveled and the time required to travel that distance are also recorded on the paper record. From this data the draw-bar horsepower is calculated.

Every tractor had to submit to two official dynamometer tests. One of these tests consisted of a normal test and a maximum test, each contesting for about 800 feet of ground. The normal test was taken while the plow was set at a reasonable plowing depth which was an average of eight inches. The same plow pulled by the tractor in the demonstration was used in the test.

Despite the fact that farmers were in the midst of threshing operations, never was such a demonstration of its kind so well attended, quite a number of the adjoining states being represented in all four demonstrations. The official report of attendances is as follows:

Columbus	4,000
Middletown	6,000
Fostoria	10,000
Akron	7,000
Total	27,000

The entire equipment was transported from place to place by a special train comprising 15 flat cars and two box cars. The loading and unloading was accomplished in from four to five hours. Two large banners were hung from the sides of the box cars, which served as a very efficient advertising agent. A truck was also used by the department for the carriage of certain equipment.

Great credit is due to Prof. Ram-sower, head of the Agricultural Engineering Department of Ohio State University, in the way he availed himself in executing and perfecting such a demonstration. The draw-bar tests were most ably conducted by Prof. McCuen,

with E. A. Silver and J. A. Howenstine as assistants. The surveying and laying out of the lands was in the capable hands of P. B. Potter and Virgil Overholt. Mr. G. B. Green was the supervisor of transportation. Special mention must be made of the splendid and most willing cooperation shown by the implement companies. The Oliver Chilled Plow Company furnished a corps of over 30 men, who were always on the alert to forward the interests of the demonstrations in every way possible. Mention should also be made of other companies who helped to make the

demonstrations a great success. These were the oil companies who furnished all oils free, and likewise the Champion Spark Plug Company.

These demonstrations were absolutely controlled by men who are interested primarily in Agriculture, and secondly in the tractor industry as a whole. There were no favors to ask or give, but simply searching for valuable information and presenting before the eyes of the farmer an illuminating picture of the steadily growing application of mechanical aid to Agriculture.

BUYING GRAIN BY GRADE IN OHIO

By C. J. WILLIARD, Professor of Farm Crops, O. S. U.

THE past summer has brought the Federal standards for wheat very definitely before most farmers of the state, since the Grain Corporation has fixed prices for wheat based on the Federal grades. However, there is still considerable misunderstanding concerning the grades and their application, as is evidenced by the recent public utterance of a U. S. senator, stating that the Federal grades are robbing the farmers, and demanding the immediate repeal of the Grain Standard Act. Is this in any way true? Have the Federal grades in any way harmed the farmer? It would seem, on the contrary, that they have in many ways been of great benefit to him, and will be of still greater benefit to him as he becomes familiar with them and with the Grain Standards Act.

A glance at the conditions responsible for the federal grades and supervision will show one of the reasons for this. Before the passage of the Grain Standards Act, each great grain market had a system of inspection, but with standards most loosely drawn and de-

pending for their enforcement on the judgment of the inspector. E. g. No. 2 Red Winter wheat was thus defined at Chicago: "No. 2 Red Winter wheat shall be Red Winter wheat of both light and dark colors, sound and reasonably clean." Under such conditions, grades at one market did not correspond to those at another, and were often influenced by competition between markets and the personal desires of various factions at the markets. Cases are on record in which inspectors were told to raise their grading one grade because some other market was getting too much of the grain, and many similar abuses were common. Under such conditions the country shipper could never be sure how the grain he sent in would grade, and hence, he would buy on a very liberal margin, and the farmer had to stand the loss.

The present standards are very definite, based on factors which can for the most part be determined with chemical accuracy, and the factors which still depend on judgment are constantly checked up and standardized by the

supervisors of the Bureau of Markets. Hence the country shipper may know just what he is selling, and he can and does work on a much smaller margin, and the farmer gets the benefit.

Also, the grades are so definite, that the farmer, if he will, can study them and be practically sure what his wheat will grade, and if he is offered a price not in line with that grade, may sell his grain elsewhere, or wait till he is offered a fair price.

Perhaps the greatest benefit of the act to the Ohio farmer has been that it has encouraged, indeed almost compelled, the purchase of his grain on the basis of its actual grade. For years one of the greatest obstacles in the way of grain improvement has been the system, or lack of it, which bought all the grain in a community at one flat rate. The grower of first grade grain was thereby penalized for the benefit of the grower of poor stuff.

Now, with a system of grading which can be rather easily and definitely applied if the proper apparatus be secured, with the prices for wheat fixed in accordance with those grades, the local elevator man has little excuse for continuing in the old rut, and a gratifying large proportion of the elevators in the state are buying approximately on grade. Where there has been competition between an elevator buying on grade and one not doing so, the usual result has been that the elevator buying on grade has gotten the good wheat, while the other has gotten the poor stuff, resulting in final disaster to the latter. The grower of No. 1 wheat has benefited immensely, and those who had low grade grain were encouraged to do better by the strongest of motives—a cash profit for doing so.

The first step in buying on grade is

the purchase of the wheat on a dockage-free basis, and over 50 percent of the elevators in the state are buying grain on a cleaned basis, the usual practice being to clean the grain and return the dockage to the farmer. This is the fairest plan, since it saves all disputes as to the amount and value of the dockage, and objections to it are limited to farmers who want to get a wheat price for cheat, straw, dirt, etc., or to elevators which are unwilling to get proper cleaning machinery.

All the steps in the grading of wheat except determining moisture are carried out on the cleaned or dockage-free wheat. Not all elevators that buy on a cleaned basis are equipped for grading the wheat or are grading it, but the number which are doing so is increasing steadily.

An important factor in the rapid spread of buying wheat on grade in Ohio was a series of grain grading demonstrations held by the Extension Service during the first two weeks of June. About 20 meetings were held in all parts of the state. They were attended by farmers; grain dealers, millers, and others interested in the grain trade. A special effort was made to have delegates from each farm bureau and to have them well distributed over the county so that they could carry back to their neighbors the information they had gained.

The speakers at each meeting included a farmer, a member of the grain trade, a licensed inspector or a supervisor from the Bureau of Markets, and a Farm Crops Specialist from the Extension Service. The grades and the apparatus and methods for determining them were demonstrated, and the problems connected with buying on grade

JOHN RAREY, HORSE TRAINER

By C. T. CONKLIN, ASSISTANT PROF. AM. HUSB.

IN the relic room of the Ohio Archeological and Historical Museum, among the arrow heads, tomahawks and mound-builders' skeletons, there has been placed an exhibit containing strange documents, several medals, and a heavy leathern horse halter, with an iron-bound muzzle attached. By this halter hangs a tale which should interest every Ohio farmer's son, for with this meagre equipment John Solomon Rarey, horse-trainer extraordinary, conquered the intractable English thorobred, Cruiser, before the eyes of Queen Victoria and her retinue, thus bringing fame and fortune to this farmer lad from Groveport, Ohio. The medals once served to express the appreciation of the nobility of many courts for the artistry and fearlessness of this young American, while among the documents are seared copies of old newspapers with graphic accounts of Rarey's exhibitions in mastering the vicious horse.

In a recent issue of the *Ohio Archeological and Historical Quarterly* Mrs. Sarah Lowe Brown, a grandniece of Mr. Rarey, has carefully assembled the details of his short but eventful life.

John Solomon Rarey, son of Adam Rarey, was born December 6, 1827, near the present town of Groveport, on the banks of the Little Walnut Creek in Franklin County, Ohio.

At an early age young Rarey showed an unusual fondness for the horses about the farm. At twelve he broke his first colt, and within four years he was breaking colts as a steady business. Believing that his life should be given to a study of the management of the horse, Rarey went to Texas and broke wild horses in that country. Returning

to Ohio in 1856, he gave a public demonstration in the yard of the Ohio Stage Company, then located at the corner of Gay and Fifth Streets, Columbus, which attracted no small amount of attention.

With introductory letters from several prominent Ohioans, Mr. Rarey left for Toronto, Canada, where he gave an exhibition before the British Army officers quartered at that place. According to the narrative, Rarey longed for more "fields of conquest," and at once sailed for England, where he interested Sir Richard Arrey, Lieutenant-General of the British Army, and Prince Albert.

Mr. Rarey's fame spread rapidly. The news of his horsemanship reached the ears of Queen Victoria, and she requested an exhibition at Windsor Castle, to which the Ohio horseman assented. On this occasion Mr. Rarey displayed his skill upon three extremely ill-tempered horses, mastering them all. The queen, like others who had witnessed his methods, enthusiastically proclaimed him the master of his profession.

According to members of his family and records which he has left, John Rarey depended on force and kindness, rather than torture to gain control of the vicious subjects which he faced. The horse was first thrown, and then by persistent handling Rarey is claimed to have gained the beast's confidence. No small amount of strength and bravery was employed in these undertakings. A preserved letter from Rarey's attending physician states that on at least five occasions he was summoned to the Rarey

PLANTING BULBS IN THE FALL

BY CARL E. GRESSLE, '20

PLANT bulbs now for winter and spring blooming — this is the cry sent out by all garden journals at this time of the year, but alas how infrequently it is heeded. We enter the home of a friend some winter evening and find there a pan of blooming flowers, and are told that they are home grown, or again we look over the garden fence and in the neighbor's garden admire his beds of spring flowers which

and send your order for a few bulbs now, and I will guarantee that you will be repaid for your trouble and expense a hundred fold. It is well to mention also that bulbs cannot be had this year in the same quantity or quality as in former years so it behooves one to order early or risk disappointment.

BULBS AND THEIR GROWTH

For those who do not appreciate the full significance of a bulb, or perhaps



the previous autumn he had thoughtfully prepared. Upon seeing these things we are reminded that this pleasure could have been ours had we but answered the call of the garden periodicals. So, should my reader be one of those folk who love the charming presence of pans of blooming Tulips, Daffodils, or Hyacinths that cheer the home on dull winter days. Or again one who admires their nodding grace in the spring garden, I say to you now, if you have not thus far done it, sit down

are not aware of the fact, I will say that a bulb is really a complete plant telescoped into small size, having stored within it sufficient food to start it growing. Aside from this it is in a dormant or resting state. It, therefore, requires proper conditions of light, temperature and moisture to enable it to complete its development.

BULBS GROWN IN WATER

There are two general methods of

(Continued on page 27)



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THE ISSUE

With this volume the *STUDENT* embarks upon its twenty-sixth year. It has gone through many trials and experiences in the last twenty-five, the greatest no doubt being last year when conditions due to the war forced members of the faculty to take over several issues in order that the *STUDENT* might survive.

As the war is a thing of the past and conditions are getting back to a normal basis again it is the hope of Mr. Arthur as business manager and myself to give to our readers as good and wholesome a volume as it is possible for us to turn out. However, to do this, it will require more than the services of two men. This has been too true in the past several years. What we need is the cooperation, helpful suggestions, constructive criticisms and services of

the students, faculty and alumni of the College of Agriculture. Every one who is connected with Ag work here at the University or has been in the past should feel it a part of their duty to aid when possible in making the STUDENT a real expression of that which is vital to Agriculture, namely a discussion of its various phases.

When each one of us feel that we are a part and give some aid ourselves to the organization that is interested in our work then, and only then, will we become a real potential force and can give our readers something really worth while.

So let us all put our shoulder to the wheel and show how strong we are when we all act together.

o

LOOK WELL TO YOUR VOTE THIS FALL

The voters of Ohio are going to be called upon to decide a question of momentous importance this coming November. Yes, my friend, you are going to have to decide by a scratch of your pencil whether or no you want Classification. Are you acquainted with classification with its snares and traps? It is not my purpose to give in detail its operation, but I do want to call your attention to the fact that you are going to decide for yourself whether we will have it upon our statutes. Are you aware that its workers tried to pass an amendment last Fall when every one was concerned about the wet and dry issue and again on May 28th they tried to have a special election involving extra expense to the state at a time when the farmers were busy with their spring planting. They knew if they could keep the farmer vote away they would win, but thanks to organized agriculture and especially the Grange for defeating this proposed election.

Why did the Classification enthusiasts attempt such underhandedness and extra expense to the state? Yes, why did they? They simply wanted a more favored class for securities, bonds and other intangibles so that they could look on while the owner of real estate would stand the burden of the taxes. There are some bugs that do man good by being parasites on other bugs harmful to man, but as yet we are not ready to take on any extra ones that are going to live off us alone.

What would classification mean to the State of Ohio? Merely this, that the State Legislature would have entire control. They might create several classes of property or a dozen. Then at each session of Ohio's Legislature each class would have its lobbyists trying and pulling with all their might and force for a lower tax on their respective class, and the one who could pull the hardest would win. Do we want this? NO. We want each and every man and woman to pay their just and due tax. If not let them *go to jail or get out of the State.*

I have talked with students who apparently do not know of classification. Are you willing to have the wool pulled over your eyes and let the other fellow vote for you. If not read State Master Taber's article in this issue and decide for yourself.

Home Economics Department

The Twelfth Annual Meeting of the American Home Economics Association was held at Blue Ridge, North Carolina, June 23 to 28, 1919. The Southern Association met with them for the first meeting in the South. Those attending the conference, numbering about 200, represented almost every state in the Union with the exception of some few in the extreme West. On the program were speakers representing the U. S. Children's Bureau, the States' Relation Service of the United States Dept. of Agr., the Americanization Department of the U. S. Dept. of Interior, the American Public Health Association, and the Federal Board for Vocational Education of Washington, D. C. One of the principal attractions of the Conference was an address on food science and reconstruction by Dr. Graham Lusk of Cornell Medical College, formerly a member of the International Scientific Food Commission.

Considerable attention was given to vocational problems, Smith-Hughes and Smith-Lever work in discussions led by Bradford Knapp, Chief of Extension work in the South—assisted by Florence Ward and Anna Richards of the Federal Board for Vocational Education.

Freshmen enrollment in the Department of Home Economics numbers about 140.

Mr. and Mrs. Wiesenberger (Ruth Megathy '17), of Cleveland, Ohio, announce the birth of a son, James.

Miss Jeanette Boran has been appointed assistant in the Department of Home Economics as Smith-Hughes secretary.

Dorris Maconathy, '17, was married June 30 to Clifford Risley at King Ave. M. E. Tabernacle.

Miss Lila Skinner, Instructor of Dietetics, is on a leave of absence attending Rockerfeller Institute.

Miss Marion Tucker has left the Home Economics Department of this University to become the University Extension Instructor in Interior Decoration at Iowa State College, Ames, Iowa.

Miss Alice M. Donnelly, a graduate of Columbia, has accepted the position as Instructor of Textiles, formerly filled by Miss Marion Tucker.

Miss Marie Freeman was married May 31 to U. R. Palmer, of Urbana, Illinois.

Miss Julia Smith, '17, of West Unity, Ohio, and Ray Doonan, '14, were married August 28 at the home of the bride.

Miss Bertha Hayes, instructor in Dietics here last year, is now instructor of Dietics at Ohio University, Athens, Ohio.

Miss Lena Bumpas has gone to Texas as head of Smith-Hughes work there.

Louise Boyenton, '19, is assistant Instructor in Textiles in the Home Economics Department.

Miss Lela McQuire has supervision of Food Laboratories this year.

Miss DeVere, assistant Instructor in Textiles last year, has taken a position as Instructor of Food and Textiles in the University of West Virginia at Morgantown, West Virginia.

Mr. and Mrs. O. M. Johnson (Maude Okey) announce the birth of a son, David Okey.

PLANTING BULBS

(Continued from page 23)

growing bulbs indoors, namely: culture in water and culture in soil. There are very few bulbs that do their best when grown in water. Those that lend themselves to water culture are Paper White Narcissus, Chinese Sacred Narcissus and Hyacinths. Either of the Narcissi are set in pebbles in dishes to hold them upright then water is poured in until it comes up to the bottoms of the bulbs. These may then be set in a dark, cool place for two or three weeks or until the roots are two or three inches long, then gradually bring them to the light. Do not try to grow them too warm as the flower buds are apt to burst or if they bloom the flowers will go to pieces rapidly. Never try to grow a single bulb in a receptacle, the effect is always disappointing. A few pans

started every two weeks till Christmas will provide constant bloom for the year. Hyacinths may also be handled in this way, but unless great care is exercised, failure will result. To get best results tall glasses made for the purpose should be used, or pebbles and dishes. In case of Hyacinths, they must be left in the dark six to eight weeks to insure best development, otherwise grow them like the Paper White Narcissi. In all water cultures the addition of a little charcoal to the water will help to keep it sweet and clean. Water should in no case come in contact with Hyacinth bulbs for any length of time.

Much better results can be obtained by using soil, which excluding the factor of novelty, would be the writer's choice of growing a medium in most

(Continued on page 32)

Mental Pep—

and Good Digestion are close relatives. Students require wholesome, nutritious food. The College Cave follows the U. S. Government's latest methods of developing the nutrients of food. To increase your efficiency as a student.

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JOHN RAREY, HORSE TRAINER

(Continued from page 22)

home to attend fractured or dislocated bones, which this ambitious young horseman had suffered.

As the fame of this young American spread thruout England he was accused of using drugs, spiritualism, hypnotism and other unusual methods. At the same time all England was scoured for horses that would prove his match. In an attempt to answer this criticism, Rarey agreed to try his hand on the vicious thorobred stallion, Cruiser, owned by Lord Dorchester. English horsemen believed that Rarey had at last met his match, some even requested him to refuse to approach Cruiser. According to the story which has been preserved, Cruiser was sired by Venison and dammed by Little Red Rover, and had 13 colts in the lists. Cruiser himself had proved fairly successful on the course, but his vicious habits rendered handling him in public almost impossible. Rarey found the English sire closely confined in a strong stall, fitted with a heavy oaken door. He was wearing the iron-bound muzzle, which is now in the museum on the University Campus. For hours Rarey worked in an effort to secure the head of the vicious horse, and at last succeeded in fastening it to the heavy iron bars which covered the window of his stall. Still longer the horseman labored before he finally succeeded in leading Cruiser from his prison stall. A few hours later Mr. Rarey rode Cruiser about the yard, as tho he were a common hack, while the nation's sportsmen warmly applauded the feat.

It might seem as tho time has unduly magnified the art and importance of Mr. Rarey's work. However, the contemporary press gave unstinted praise

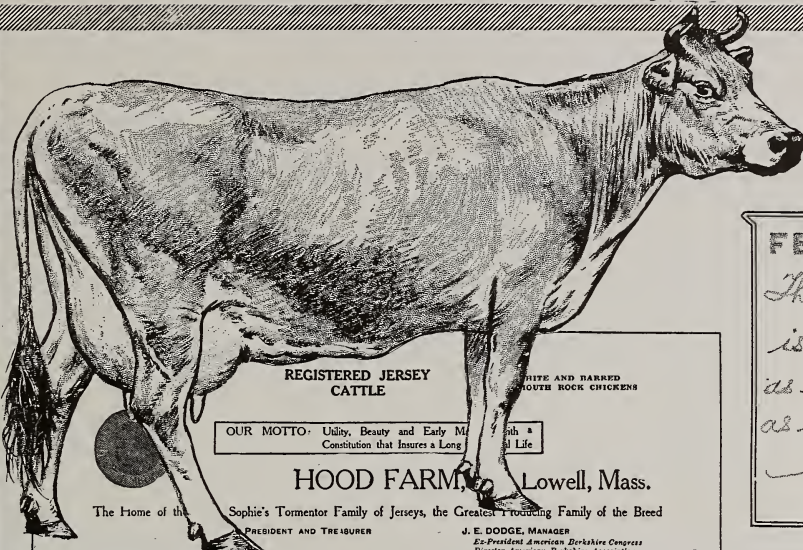
to this young American horseman. In fact, all Europe marveled. Paris, Stockholm, Berlin and St. Petersburg were all visited, and in each place public exhibitions were repeatedly given to packed houses. In all of these mentioned cities classes were organized to study Rarey's methods. People from all walks of life were disciples of this young man from Ohio. It seemed as tho all Europe was wildly enthusiastic about Rarey and his work. Mr. Rarey's farewell lecture in Europe was given in the Crystal Palace in England before an audience of several thousand people.

In the meantime Lord Dorchester had presented the once-ferocious Cruiser to Mr. Rarey, who took the horse with him on his tours, demonstrating his methods of control upon the same beast that had once threatened his life. It may be of interest to add that Cruiser lived to the ripe old age of 23, surviving his master by nine years. In his will Mr. Rarey amply provided for the old horse that spent his last days in the blue grass pastures that skirt the Little Walnut.

Returning to America in 1860 Mr. Rarey began a tour in which he appeared in many theatres and music halls of our larger cities. Niblo's Garden in New York, Academy of Music in Philadelphia, and Bryan Hall in Chicago were packed night after night. In one audience in Boston sat ex-President Franklin Pierce, Ralph Waldo Emerson and Wendell Phillips.

The United States was just as enthusiastic about Rarey as Europe had been a few months before. The *New York Herald* characterized him as "the best known American," and recommended that a gigantic celebration be staged to greet this "American Cen-

(Continued on page 33)



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JED-ESW.

May 6, 1919.

Mr. R. P. Walden,
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17 Battery Place,
New York, N. Y.

Dear Sir:-

Yours of May 2nd at hand. I would state that as usual
in her former tests, Sophie 19th of Hood Farm consumed a large
proportion of Buffalo Corn Gluten Feed, ranging from three to
four pounds per day during the entire year. She is now at
fifteen years of age in perfect physical condition and is
due to calve in August, and we look for another large record
from her, showing that the feed she has consumed in past years
has done her no harm. It is safe to say she has consumed
while making her eight yearly records over six tons of
Gluten Feed.

Yours truly,

Hood Farm,

J. E. Dodge, Mgr.

FEED UP

*The Feeding
is every bit
as important
as the Breeding*



Made by

Corn Products Refining Co.
New York Chicago

BUYING GRAIN BY GRADE

(Continued from page 21)

and the handling of this year's wheat crop were thoroughly discussed. Farmers and grain dealers had a chance to get together on common ground, and many mutual misunderstandings were removed. In several counties all dealers in the county pledged themselves to buy grain on grade as a direct result of these meetings, and their indirect effect can hardly be calculated.

The misunderstanding which caused the senator to say that the wheat grades were robbing the farmer arose out of the fact that this year, because of disease and unfavorable climatic conditions most of the wheat in the country is of low grade. To what an extent this is true in Ohio can be seen by the following table, from the State Bureau of Markets, showing the grades of all cars inspected in Ohio markets from July 15th to July 15th, this year and last:

	Total Cars Inspected		Percent of Total in Each Grade	
	1918	1919	1918	1919
No. 1 ----	1,180	68	36.8	1.7
No. 2 ----	1,475	1,330	46.0	32.6
No. 3 ----	345	1,893	10.8	46.5
No. 4 ----	154	613	4.8	15.1
No. 5 ----	5	127	.2	3.1
Sample ---	46	41	1.4	1.0
	3,205	4,072	100.0	100.0

At the beginning of the season the price of wheat was fixed for the higher grades only, and some dealers, perhaps, did not pay for No. 4 or No. 5 wheat, quite as much as the market justified. The writer knows of no case in which this happened in this State, and certainly such cases were isolated, and did not justify the violent charges made. In any case, the matter was not one of *grading*, but the proper discounts for low grade wheat. The elevators would have offered a low price for the low

grade wheat, or one based on average quality of the crop, if no grading had ever been done.

At the present time even this difficulty is cleared up, as the Grain Corporation has announced fixed prices for all grades but sample grade, and for some cases of sample grade wheat. These discounts took effect September 2, and are as follows:

"No. 2 wheat 3c under No. 1.

No. 3 wheat 6c under No. 1.

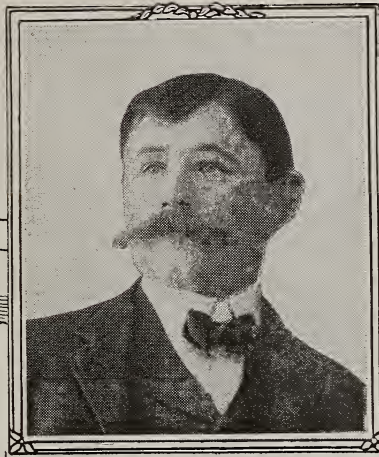
No. 4 wheat 10c under No. 1.

No. 5 wheat 14c under No. 1."

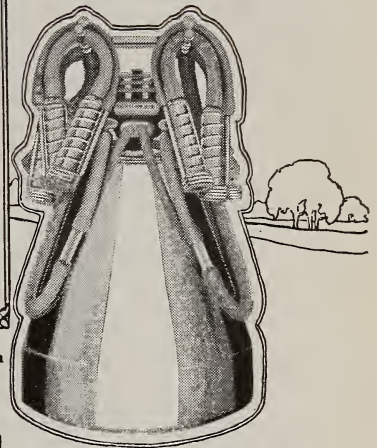
For all wheat otherwise conforming to the specifications of No. 5 or better, but deficient in test weight, discount No. 5 price 3 cents for each one pound deficiency in test. Wheat grading below No. 5 for reasons other than deficiency in test weight shall be bought on its relative merits. Smutty wheat to be discounted from 2 cents, for slightly smutty, to larger discounts, according to degree of smut. Mixed wheat will be taken at discounts ranging from 2 to 5 cents, according to quality."

The farmer should make every effort to familiarize himself with the Federal grades not only for wheat, but also for corn and oats. They are the grades by which his grains are sold when they reach the terminal markets, and they are here to stay. The sooner all transactions in these grains are based approximately on grade the better it will be for all concerned, because the grades classify grain very definitely according to its quality, so that each party to a transaction "on grade" knows exactly what he is buying or selling, and all get a fair deal.

F. W. Duffy, '14, is now assistant professor of Agricultural Engineering in charge of farm machinery at the University of Wisconsin, Madison.



Tom Christensen, who had nerve enough to install the first Perfection in his community.



His Neighbors Laughed at Tom Christensen When He Bought His Milker. Now There Are 50 in His Neighborhood.

THREE years ago no one in Tom Christensen's neighborhood had ever used a milking machine. Mr. Christensen wanted to make more money out of his farm. But he did not have hands enough and there weren't enough hours in the day.

It took nerve to resist the scoffs of his neighbors and to try something new.

"When I first put in my milker," says Mr. Christensen, "Everyone around here said, 'There's another boob who's going broke on machinery. He will ruin his cows and he will lose a lot of money.'

"But my hired men were going to leave and I had to do something. Today the Perfection Milker has changed this farm. We have an electric light plant, an electric washing machine, an electric vacuum cleaner and other improvements, but I was saying to my wife the other day that while all these things help us a great deal, it was the Perfection Milker that started us."

The Cows Like the Perfection.

"Instead of my cows being hurt by the milker, they like it. When I start the milker, I have often heard by cows bellow for it just like for their own calves and then turn around and lick the pail. You never heard of a cow licking the hand of a man who was doing the milking, did you?"

"And the Perfection is better for my cows than hand milking. When a hired man thinks it's quitting time, he hurries and doesn't milk clean. This cuts down the amount of milk for weeks and makes no end of trouble. But my Perfection milks each cow just the same every night and it never gets mad no matter what happens.

"My wife and I both had to milk before we had the Perfection. Now my two little boys often do the milking alone and it only takes them 40 minutes."

And the Neighbors Own Perfections, Too.

"When my neighbors found out that my milk check was averaging over \$500 a month, they began to have a new idea about the Perfection Milker. Today there are 50 Perfections within a few miles of my place and everybody is satisfied with them."

Mr. Christensen's story is the experience of one of thousands of practical dairymen.

Send for Names, Addresses and Catalog.

We will gladly send you his address together with the names and addresses of many other Perfection owners to whom you can write. We will also send FREE, "What the Dairymen Wants to Know,"—the book that answers every question about milking machines. Write today.

Perfection Manufacturing Company

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The Perfection is The Milker with the Downward Squeeze Like the Calf

PERFECTION MILKER

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PLANTING BULBS

(Continued from page 27)

every case. Before considering the culture in soil I will mention one bulb, called the Colchicum or Autumn Crocus which requires neither soil nor water to produce flowers. If you want a real novelty, order one from your seedsman, set it in a dish to keep it upright and watch it bloom. After blooming, however, the bulb should be potted up in good soil for it will then make leaves and after they have made their growth, they will ripen and the bulb is ready to bloom the next autumn.

SOIL CULTURE INDOORS

Growing bulbs in soil is generally attended with fewer risks. Better and more lasting flowers are generally in evidence. It may not be quite as convenient as water culture, but is more satisfactory. While bulbs are telescoped plants and provided with stored food, the additional food furnished by the soil goes a long way in perfecting and maintaining a fine flower. Soil or growing mediums should receive careful attention as a poor soil gives poor results. It should be a fibrous loam having plenty of humus in the form of decayed leaves or very well rotted manure. Bulbous plants, such as Narcissi, Tulips, Daffodils, Crocuses and Hyacinths look best when planted four to five bulbs in a pan or half pot. The Hyacinth looks fairly well when potted singly in four and one-half inch pots. Other advantages of half pots or pans are that they require less soil, and root action is a little more rapid than in standard pots. After having selected the pans, put in the bottom of them a generous quantity of drainage material such as broken crocks or cinders; then put in a layer of good soil only deep enough to leave space above it a little

greater than the height of the bulbs and keep it level; then set in the bulbs allowing about three-fourths of an inch all around them. Soil should be filled in just to the neck of the bulb, in case of Daffodils, Narcissi or Hyacinths. Tulips should be covered one inch and Crocuses about the same. All bulbs, except Freesias and Paper White Narcissi, can be potted up as soon as received, after which they should receive a good soaking. These bulbs must now develop roots so they should be placed, either in a dark, cool cellar where they will not dry out, or where they can be watered, or in a cold frame set on cinders for drainage and covered with manure sufficient to prevent solid freezing, but not enough to heat. A light freeze will do them good. When roots have developed till they show at the bottom of the pots, the first lot of bulbs may be taken to force, the remainder can stay till needed. To get good growth, they must be started slowly, bringing to light and heat gradually. Again cool growing (not over 60 degrees) should be emphasized or the buds will dry up and the foliage be soft and weak. Should the stems not be long enough a heavy paper cylinder, a foot high, may be placed over the plant and the light entering at the top will tend to draw them up. Forcing will take from four to eight weeks, depending on vitality of bulb, number of roots, time of year, light and temperature. Forced bulbs cannot be forced the second time so when thru blooming, let the leaves ripen and then plant the bulbs in a border wherein they will recuperate and bloom out-of-doors in a year or two.

BULBS OUT-OF-DOORS

With a few modifications indoor culture involves the same processes as out-

(Continued on page 37)

OHIO FIELD BARBER SHOP

HIGH ST. and 18th AVE., Opposite Ohio Field

G. V. Ackerman, Prop.

Columbus, Ohio

JOHN RAREY, HORSE TRAINER

(Continued from page 28)

tour" when he arrived from Europe.

Of course many doubtless attended his performances out of curiosity, in anticipation of witnessing exciting and dangerous episodes. But on the other hand thousands were moved with the humanitarian work of Mr. Rarey, as well as the information which he imparted.

After his tour of America Mr. Rarey returned to Groveport, where he erected a mansion on the site of the old home, including a part of the walls of the old house in the structure. Here Mr. Rarey entertained distinguished guests from many lands. Social graces and a pleasing personality characterized this young horseman. Many press reports of Mr. Rarey's performances comment on the gentlemanly manner and the freedom from bluff and bluster which attended his exhibitions. One Englishman remarked that he 'showed equal grace at a tea table as in the presence of an intractable steed.'

Today, the Rarey mansion is converted into a country hotel, which is the mecca for motorists from the city

of Columbus. The Sunday guest eats his chicken dinner, and the college student with his lady fair trips the light fantastic, wholly unconscious that fifty years ago an invitation to enter these same walls marked quite a social achievement.

Extreme physical exertion and exacting engagements undermined Mr. Rarey's health and on October 4th, 1866, in the City of Cleveland, he died—still a comparatively young man of 39 years. Thus passed a unique person from American life. In this day of the more sluggish draft horse of fairly even temper it may seem hard to appreciate the worth of Mr. Rarey. Doubtless he was idolized by the masses, but nevertheless his true worth appealed to the serious minded. He was a master in his work, and raised the standard of handling horses in many lands. It seems fitting that his letters and medals, together with the story of his life, prepared by Mrs. Sarah Lowe Brown, should be preserved in the archives of the Ohio Museum, for surely Mr. Rarey was a pioneer in his work, as well as a contributor to the knowledge and wealth of agricultural people.

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CLASSIFICATION

(Continued from page 11)

We, as farmers, know that classification will place almost all the local burdens of taxation on real estate. The school men of the State may not be particularly interested in this phase of the question, but they are interested in fairness and justice. The schools are desperately in need of money; but however great that need, we know, no school man in Ohio wishes the homes of the State which rear the children to pay all the expenses of their education. This expense should be distributed equally among all the citizens of the State in proportion to their ability to pay and not in proportion to the kind of property they happen to possess.

As Judge Wanamaker points out in his decision against classification, there is another serious fault with the scheme.

If it is adopted in Ohio, the local subdivisions lose their home-rule power of taxation. The Ohio Legislature will say each session what shall be taxed, and how much each class of property shall be taxed. The people will be deprived of any expression on the subject, for the Ohio constitution expressly provides that "laws providing for tax levies shall go into immediate effect" and "shall not be subject to the referendum."

So classification of property in Ohio establishes czar-rule in the legislative halls at Columbus, something abhorrent to a lover of home-rule.

Who will decide the rates under a classification law? Again the answer is, "The Ohio Legislature." You may trust the present Legislature. Can you trust the next one, and the next? If the banks of one Ohio city subscribe

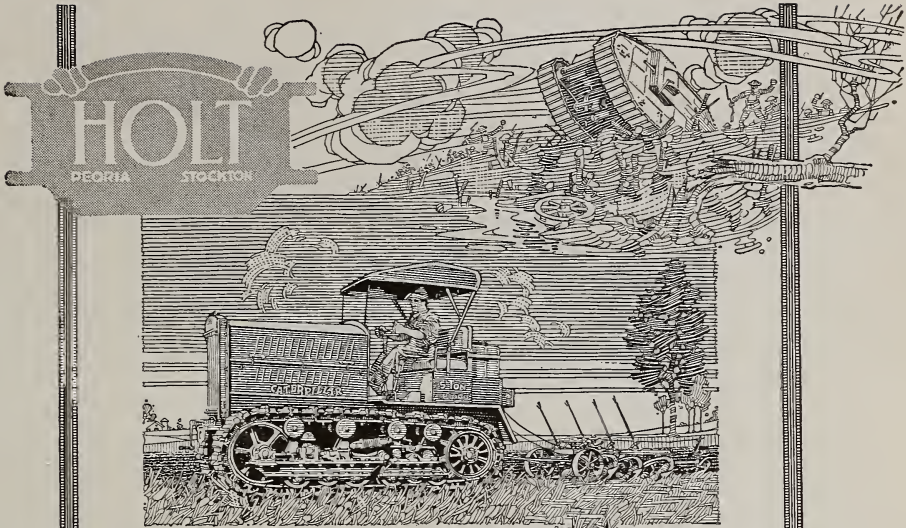
(Continued on page 39)

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CLASSIFICATION FAVORED

(Continued from page 13)

developing it? Will not the common sense and common honesty of "God's cheerful, fallible men and women" provide a way? Why not untie our hands and give experience, statesmanship and ingenuity opportunity to work out for a great state a system of taxation that will raise the revenues needed in a way that will not be burdensome to any class of people or property? The leaders of both political parties favor the amendment. The men who have the most to do with administering government say it is right and practicable. Experience in other states shows that it has aided very materially in solving the vexing question of taxation. Why not let Ohio have a chance also?

Opponents claim that lobbying will be necessary. So much the better. "In the multitude of counsel there is much wisdom." I have represented the farmers and school interests in Ohio as legislative agent for a great many years and I have found the General Assembly and Congress anxious to get information of a special character and willing to honestly and intelligently represent

their constituency. I have never found much good in a man who was constantly suspicious of every one else, or whose imagination run riotously to portraying what evil other people and other interests would do. He is very apt to judge others by himself. He is not an honest counsellor or guide.

More funds are needed and must be produced for the support of government. The Smith limit law is in danger of repeal. Under classification it will stand.

The leaders of both political parties favor an income tax and such a law will in all probability be enacted at the next session of the legislature. How can a just income tax law be enacted if the present constitution is enforced which would tax all property at its true value in money, at a uniform rate, and then tax the income derived from the property already fully taxed?

The next quarter of a century will witness a degree of taxation never dreamed of before. Wars are costly. Federal and state governments have been increasing their duties, functions and responsibilities. The federal government has never circumscribed its power of taxation or limited itself in the subjects it would tax. Most of the states in the Union have put themselves in this advantageous position. As costs have increased and the burden on land and visible property grew heavier governments have found it necessary to tap other resources of revenue. The invariable result has been to lower the tax on land and increase the amount received from intangibles. This has not necessarily meant an increased RATE but an increased VOLUME, of taxable property. The sound common sense and inherent honesty of Ohio will place her in the same favored class.



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Good Things to Eat in the
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PLANTING BULBS

(Continued from page 32)

door culture. The underlying principles are the same. Out of doors, a bulb will not be forced and will bloom where planted and its blooming time will depend on the season. Soil conditions must be good; a heavy soil will cause the bulb to decay as will one having in it fresh, or heating, manures. The ideal again is a loose loam having plenty of well rotted humus.

Planting schemes are many and various, but informal plans are always most satisfactory for if a plant here and there does not show up nothing will be missed, whereas one flower missing in a formal bed will spoil the entire effect. A shrub border is always brightened up by a few Tulips or nodding Narcissi. A few bulbs in groups in perennial gardens will add a touch of color before

many other plants appear. Crocuses may be planted in lawns provided the foliage has a chance to ripen before the grass is cut.

It is advisable to plant as soon after September fifteenth as possible, for it is from this time until freezing weather that the bulbs make their roots for use next spring. In setting bulbs a good rule would be to place them twice their depth in a good light soil. In the case of heavier soils a little shallower would be better. Good bulbs, especially Hyacinths should have an inch or two of sand below the bulb to prevent decay. When planting is completed wait till the ground is frozen, then cover with three or four inches of strawy manure, the object being to keep the ground frozen and prevent injury by alternate freezing and thawing.

(Continued on page 39)

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Use **Hansen's Rennet Tablets**, **Rennet Extract** or **Lactic Ferment Culture** for cheese making (in the small dairy **Junket Brand Buttermilk Tablets** are used to advantage for cheese making).

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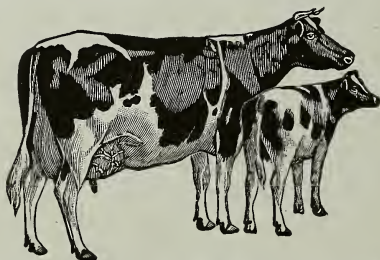
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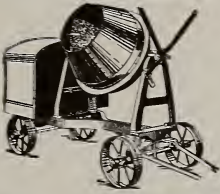
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PLANTING BULBS

(Continued from page 37)

This material should be removed early in the spring. A light freeze, or even snow, on the newly started plants need cause no alarm as they will be well hardened to cold and development will not stop.

CLASSIFICATION

(Continued from page 24)

\$80,000.00 to carry classification, how much could all the intangible interests

of the State subscribe each year to secure favorable rates on intangible property? This is the constant menace under classification. No rate in Ohio would be assured of stability. No man could estimate in one year what his tax rate would be the next.

Under classification, taxation would become the football of politics and the common-every-day citizen of the State with his home and his lack of organization, money and influence would always be under, at every "down" of the ball.

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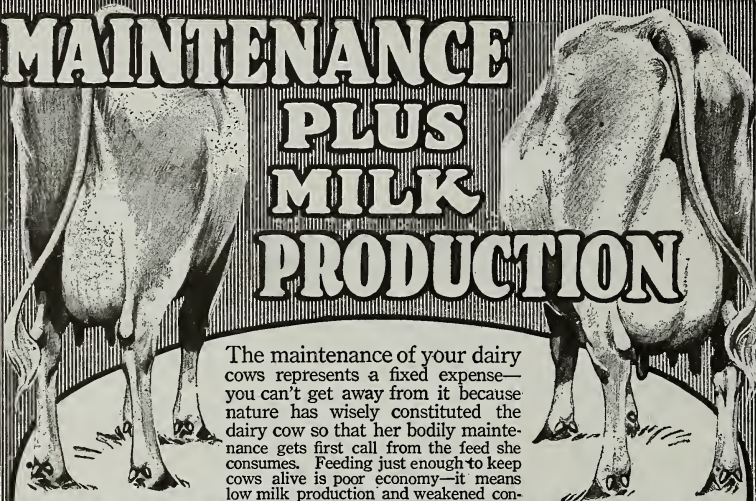
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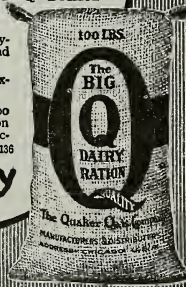
SCHUMACHER FEED AND BIG "Q" DAIRY RATION

generously at all seasons of the year, but especially so right now because your cows have just passed through the hot, short pasture season—their reserve energy has been heavily drawn upon—their vitality and stamina are at a low ebb and can only be restored by generous feeding of the proper grain ration if they are to produce profitable results this winter. Feeding SCHUMACHER FEED and BIG "Q"—NOW—will put your cows in tip top condition so that you will get the benefit of the present good milk prices during the fall and winter. You'll save feed later on by feeding all your cows will consume NOW.

No other feeds in the world so well supply the maintenance and milk production requirements of the dairy cow as SCHUMACHER FEED and BIG "Q" DAIRY RATION. This is proven by the fact that they have helped 35 World's Champion Dairy Cows to make their world's records, and by the further fact that the foremost dairymen in the country feed and endorse SCHUMACHER FEED and BIG "Q" DAIRY RATION enthusiastically.

These well known, widely used and dependable feeds are not an expense—they are big profit makers. Your dealer can supply you.

WARNING! Don't burn out your cows from feeding too much protein. Excessive protein in ration greatly increases cost and does not give the maximum milk production throughout lactation period. 136

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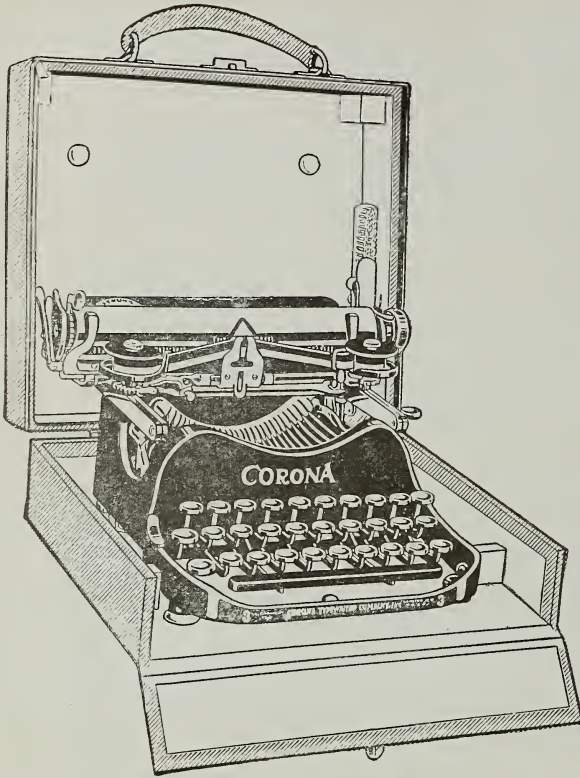
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Assembly Nights—Mon., Thur., Fri. and Sat.

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Tuition can be paid \$1 a lesson until paid. Private lessons can be had afternoon or evening. We aim to teach you to dance in one term.

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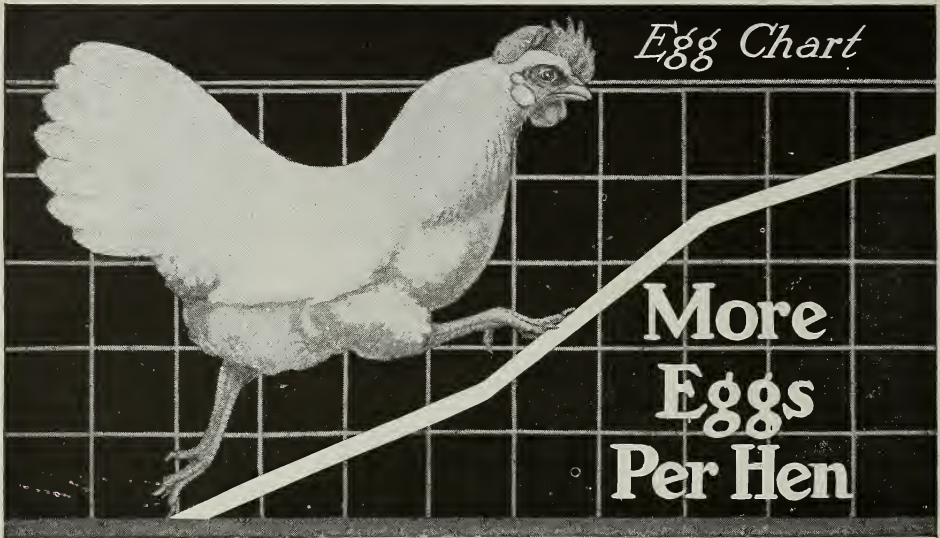
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Purina Chicken Chowder and Purina Scratch Feed

when fed together, supply the scientific balance of all the elements a hen requires to produce the highest number of whites and yolks of which she is capable.

Grain-fed hens retain a quantity of unlaidd yolks in their bodies. These extra yolks turn into fat—and a fat hen is a poor layer. Purina Chicken Chowder supplies an abundance of the elements for whites, and therefore enables the hen to complete and lay her eggs. The following figures show the perfect balance of whites and yolks contained in Purina rations:

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50 lbs. of Purina Scratch Feed.....	123.75	71.06
50 lbs. of Purina Chicken Chowder.....	91.02	141.27
100 lbs. of Combined Ration (half and half)....	214.77	212.33

We will refund the money paid for Purina Chicken Chowder if hens fed Purina Chicken Chowder with Purina Scratch Feed, as directed, do not lay more eggs than when fed any other ration.

Get Our 1920 Poultry Book Free.

A complete, valuable poultry manual of 64 pages and many illustrations. It contains charts for breeding and feeding, plans for poultry houses and home-made fixtures, rules for care of baby chicks, cures of diseases, daily egg record blanks, etc.



PURINA MILLS
Ralston Purina Co.,
PROPRIETOR

St. Louis, Mo. Buffalo, N. Y.

Sold in checkerboard bags only





WHY Have Over 10,000,000 Hogs Been Treated With **AVALON FARMS**

(Trade Mark Registered U. S. Pat. Office)

HOG TONE ?

In fact, I am confident that the number so treated is considerably more than 10,000,000, possibly 15,000,000. Iowa, the state which uses the greatest amount of AVALON FARMS HOG-TONE, now raises 10,000,000 hogs annually. Iowa hog-raisers are given credit for knowing their business. Now—why are they the biggest users of this liquid hog conditioner, fatener and worm remover?

AVALON FARMS HOG-TONE has been on the market for only 3 years, yet it is today being used by 20 times as many hog-raisers all over the United States as are many hog-powders and remedies that have been advertised for ten times as many years as HOG-TONE.

Of course, one reason why HOG-TONE is used by so many hog-raisers and such an increasing number of hog-breeders is that

I Have Sent 60 Days' Supply of This Liquid Hog Conditioner, Fattener and Worm Remover to a Million and More Farmers at My Own Expense and Risk
During the Last Three Years

I admit that that took some nerve. But the experience I had with HOG-TONE on my own hog farm near Ft. Wayne, Ind., made me certain that any hog-raiser, who would give HOG-TONE a fair trial, would profit splendidly by doing so—and would gladly pay me for the HOG-TONE at the end of the **60 Day's Trial**.

So I am continuing my offer to send any

farmer all the HOG-TONE he needs to treat all his hogs for 60 days. He is not to pay me a cent at the time I send him the HOG-TONE—only the small transportation expense. Then—at the end of 60 days—I don't want him to pay a penny unless he is completely satisfied with results.

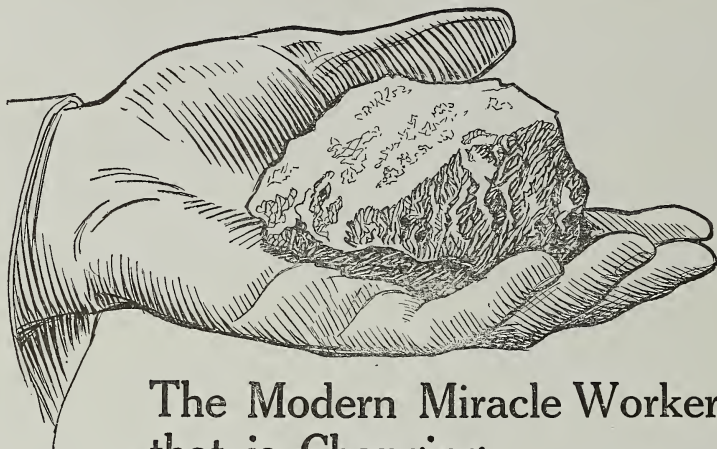
This offer is open to you—or anyone whom you know who is raising hogs. I stand all the risk.

President

Avalon Farms Company

347 W. OHIO STREET

CHICAGO, ILL.



The Modern Miracle Worker that is Changing the Habits of Millions

SCIENCE is the modern Aladdin. It changes the face of the world almost over night. Steam was discovered—and life at once began to change for every man, woman and child then alive. For them and their descendants life could never again be the same.

Union Carbide was discovered; and already its miraculous power is lightening and brightening the life of every one living to-day. Such world forces are irresistible. The results they make possible are so helpful that barriers fall by the wayside as the wave of progress rushes on.

Union Carbide made from selected coke and lime and fused in electric furnaces at a heat of 6,000 degrees Fahrenheit (twice the heat necessary to melt steel), looks like ordinary crushed stone. Add water to it, and there is straightway produced the most wonderful gas in the world—Carbide Gas.

Carbide Gas is mending machinery in factories, railroad and ship-building plants all over the earth. Broken parts are heated in a few minutes, and then stick together as if they had never been parted.

Carbide Gas lights the entrances to the Panama Canal, Government Barracks, light-houses, buoys and school houses. It supplied light to the contractors who built the New York Subways, and the great Catskill aqueduct tunnel under the Hudson River at Storm King.

It already lights quarter of a million farm houses and barns, hospitals, fields for night ploughing, and is used for loading and unloading of all kinds. Over 700,000 miners depend on Carbide Gas to work by.

If you would like to read more about this miracle worker, that is changing the habits of millions, write us for a free booklet.

UNION CARBIDE SALES COMPANY

30 East 42nd Street, New York

Peoples Gas Building, Chicago

Kohl Building, San Francisco



Every Moline-Universal Tractor Must Give Satisfactory Service

When you buy a Moline-Universal Tractor the transaction does not end there. In addition you buy Moline Service—which is service that satisfies. This means that with intelligent operation you will be able to keep your tractor working to full capacity during its entire life.

Moline Service means exactly what it says—and we have perfected an organization which enables us to furnish Moline Service that satisfies. We can do this because:

1. Twenty-three Moline factory branches in all parts of the United States carry stocks of repairs and complete machines—in charge of an expert service department.
2. Factory branch territories are sub-divided into service territories each in charge of a resident Moline Service Supervisor—whose sole duty is to see that Moline Service is properly and promptly furnished in his territory.
3. Every Moline Tractor Dealer is required to carry Moline-Universal Tractor repairs in stock and have a competent service department to provide prompt and efficient service.
4. Tractor schools of short duration in charge of expert instructors are being held in co-operation with Moline Tractor Dealers, to instruct farmers in the care and operation of Moline-Universal Tractors. These schools will continue to be held as long as there is a demand for them.
5. With every Moline-Universal Tractor we furnish a complete instruction book, giving full information on care and operation of the tractor.
6. Moline-Universal Tractors are simple in construction, have the best materials and workmanship money can buy, and all working parts are quickly accessible.

Therefore we are prepared to back Moline Service to the limit and you are sure of getting constant and satisfactory work from your Moline-Universal Tractor.

If any Moline-Universal Tractor is not giving its owner satisfactory service we want to know about it *immediately*.

The Moline Plow Company leads the Tractor industry—first, in developing and perfecting the original two-wheel, one-man tractor which does *all farm work including cultivating*, and again in announcing a service plan which makes a “booster” of every Moline Tractor owner.

Join the throng of “Moline Boosters.” You will be able to do twice the farm work at half the expense. See your Moline Dealer now or write us for full information.

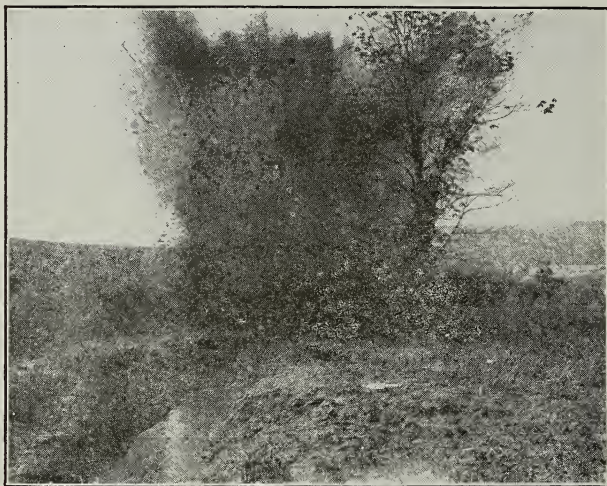
Moline Plow Company, Moline, Illinois

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Atlanta	St. Louis	Stockton	Denver	Minot	Indianapolis
New Orleans	Poughkeepsie	Spokane	Kansas City	Sioux Falls	Columbus, Ohio
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State your problems to our Agricultural Department, and ask for a copy of "Progressive Cultivation", a 68-page booklet that explains the economical and safe way to use dynamite.



HERCULES POWDER CO.

(Agricultural Dept.)

Wilmington

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Please send me a copy of "Progressive Cultivation". I need dynamite for

Removing.....stumps from.....acres.

Digging.....rods of ditch.

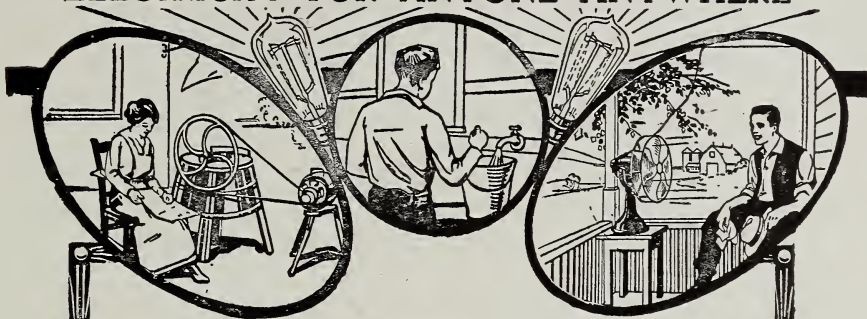
Removing.....boulders from.....acres.

Planting.....trees. Subsoiling.....acres.

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Delco-Light adds an extra hand to the farm working force—

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Delco-Light not only furnishes an abundance of clean, safe and economical electric light for house and barn but—

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It lengthens the working day by making it possible to do the barn chores safely and easily after dark—

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And at the same time it adds greatly to the comfort and convenience of farm life.

Delco-Light is a simple, compact, highly-efficient electric plant that requires little or no attention, and that runs on kerosene, gas or gasoline.

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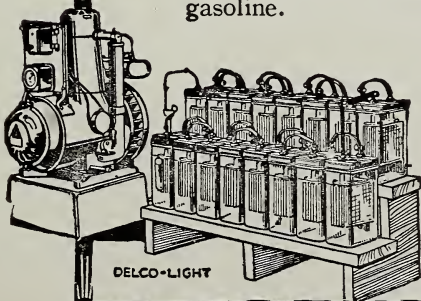
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